

CLAIMS

1. A modular unit for transporting work pieces and suitable for use in an array of such units, comprising a top; transportation means which propel the work pieces onto and/or off said top and against which the work pieces rest when located on the top of the unit, the transportation means being part of said top; in which the transportation means occupy one or more regions of the top of the unit whilst one or more remaining regions of the top are not occupied by transportation means but are suitable for receiving a work piece treatment device.
2. A modular unit according to claim 1, wherein the transportation means are located substantially about the periphery of the top and the region of the top of the unit located within the periphery of the top is suitable for receiving a work piece treatment device.
3. A modular unit according to either of the preceding claims, wherein the transportation means comprise a wheel, a drive causing the wheel to rotate, and means to selectively engage the wheel with a work piece, when a work piece is located on the top of the unit.
4. A modular unit according to any preceding claim, wherein the unit comprises at least one wheel for driving the work piece in one direction and at least one second wheel which selectively engages the work piece and is oriented, in use, in a second direction.
5. A modular unit according to claim 4, wherein the unit's at least one second wheel not only engages the work piece but is adapted to lift the work piece so that the work piece only engages the second wheel.
6. A modular unit according to either claim 4 or claim 5, wherein the unit's at least one wheel and the unit's at least one second wheel are orthogonal one relative to the other.
7. A modular unit according to claim 1, wherein the unit comprises two compartments: one for receiving a work piece treatment device located in an upper compartment of the unit and a second containing the control electronics; and a separating member is provided to seal the second compartment from the first compartment.

8. A modular unit according to any preceding claim, wherein work piece lifting means are provided to lift the work piece, the lifting means being sufficiently spaced to allow the transportation means to continue to transport work pieces whilst lifting one work piece.

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9. An array of modular units, wherein the units are each in accordance with any of claims 1 to 8 and of substantially equal height and control means are provided to control the displacement in the X and Y plane from one unit to another.

10 10. An array of modular units according to claim 9, wherein each unit's control means allows the direct communication from one unit to its direct neighbouring units, whereby the transportation from one unit to the next may be coordinated.

11 11. An array of modular units according to claim 9, wherein a further array of modular units is suspended above the units comprising work piece treatment devices.

12 12. An array of modular units according to claims 9, 10 or 11, wherein the control means stores a number of operative protocols dependent on work piece types, selects the appropriate operative protocol dependent on the work piece to instruct the operation of a series of units, and scheduling means are provided, whereby several protocols may run in parallel in the array of modular units.

13 13. An array of modular units according to any of the preceding Claims, wherein one or more plates are provided with recessed portions into which modular units are selectively inserted and removed.

14 14. A modular unit according to any of the preceding Claims, comprising means which protrude from the top of the unit and which are so sized and shaped to engage a conical recessed portion of a work piece when located on the top, whereby the position of the work piece on the top of the unit may be accurate.

15 15. A modular unit according to Claim 3 onwards, wherein it operates in conjunction with a pallet which has one or more recessed tracks corresponding to one or more wheels.

16. A modular unit according to any of the preceding Claims, comprising a sensor for sensing the position of a work piece when located over said sensor.

5 17. A tensioning arrangement, for a belt drive or chain drive of the kind in which a temporarily induced slackness in the belt or chain must be compensated automatically and followed, if subsequently necessary, by a correspondingly opposite sense movement of the tensioning means to release the tension previously imposed; characterised in that the tensioning means comprises first and second arms arranged in a mirror-image formation  
10 to bear simultaneously in use against respectively opposite runs of the belt or chain.

18. A modular unit or an array of modular units or a tensioning arrangement substantially as hereinbefore described with reference to and/or illustrated in any appropriate combination of the accompanying text and/or figures.